

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

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| Applicant | : Carr et al.   |
| App. No   | : 10/564,125  |
| Filed     | : August 21, 2006   |
| For       | : PROCESS FOR PREPARING<br>CONCENTRATED MILK PROTEIN<br>INGREDIENT AND PROCESSED<br>CHEESE MADE THEREFROM |
| Examiner  | : Wong, Leslie A.   |
| Art Unit  | : 1781  |
| Conf No.  | : 8879  |

**DECLARATION OF GANUGAPATI VIJAYA BHASKAR UNDER 37 C.F.R. § 1.132****Mail Stop AF**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

I, Ganugapati Vijaya Bhaskar<sup>1</sup>, of Palmerston North, New Zealand, do hereby declare and say as follows:

1. I am a Principal Research Engineer employed by Fonterra Co-operative Group Limited. I hold a Ph.D. in Chemical Engineering from the University of Queensland, Australia and have worked in dairy research for 20 years. After finishing a Ph.D. in Chemical Engineering in Australia, I did two years of post-doctoral fellowship in Dairy Engineering at Massey University, New Zealand. In 1992 I joined the New Zealand Dairy Research Institute and have been at the Institute (currently called Fonterra Research Centre) for the past 18 years. My main work has been developing milk protein ingredients for various dairy applications, such as cheese foods, yoghurts and beverages.

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2. I have read and understand the claims in the present patent application, application serial number 10/564,125. I understand that the claims concern a process for preparing a concentrated milk protein ingredient.

3. I have read and understand the rejections in the Advisory Action dated May 14, 2010 and the Final Action dated January 6, 2010. I understand that the Examiner has asserted that the pending claims are unpatentable over Bhaskar et al. (US 2003/096036), General Foods (EP 0435573) and Schreiber Foods (WO 82/01806) in view of Poarch (US 4,202,907).

4. In the Final Action the examiner asserts the following:

It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to use the cation exchange as taught by Poarch in that of Bhaskar et al (US 2003/0096036), General Foods (EP 0435573, and Schreiber Foods (WO 82/01806) because the use of cation exchange to replace one ion with another in the milk protein art is conventional.

5. It is not obvious to me that substituting the cation exchange step from Poarch in the Bhaskar et al. process would lead to the presently claimed process. Bhaskar already uses cation exchange. The milk protein concentrate produced in Bhaskar et al. differs from that of the presently claimed process in that it is not treated with a clotting enzyme.

6. Bhaskar et al. does describe a process for manufacturing cheese that involves use of a clotting enzyme. However, that process does not involve maintaining a solution after adding the clotting enzyme or concentrating the treated solution.

7. General Foods describes a process in which mechanical agitation is used with renneting of skim milk ultrafiltrate. The mechanical agitation causes formation of a particulate curd, having a particle size of about 3 to about 22 microns. The presently claimed process differs because curd particles are not produced.

8. Schreiber uses whole milk low pH ultrafiltration to manipulate calcium. Following such a process, cation exchange is superfluous as the low pH ultrafiltration depletes the product of calcium that can be exchanged for sodium or potassium.

9. Schreiber does not produce a concentrated milk protein ingredient solution. Instead, the Schreiber process produces a gel that is a cheese or a cheese base. I believe that the

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<sup>1</sup> Ganugapati is my surname, but professionally I go by the name of Dr. Bhaskar.

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difference results from the ultrafiltration being less effective at removing calcium from casein micelles, causing formation of a product that forms a gel.

10. Poarch's processes and application are meat oriented and the particular application clearly directed at absorption of more water into meat products. It does not talk about making gelled cheese or suggest any processes that would be useful for making a dairy product.

11. Rennet casein is manufactured by renneting skim milk at normal skim pH (~6.7). The manufacturer removes the whey from the coagulated casein curd. The curd particles are milled to the required size. Due to heavy fouling in the evaporator tubes, evaporators are not used on renneted skim milk or renneted whey proteins at neutral pHs (~6.7).

12. Before the disclosure in the present application, I believed that rennet casein was not sufficiently soluble to allow formation of a renneted milk protein concentrate solution at neutral pH. Before the disclosure in the present application I also did not believe that a renneted standard milk protein concentrate solution, as claimed, could be spray-dried.

13. I declare further that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true. I declare that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Respectfully submitted,

Dated: 5 July 2010

By: G. Vijaya Bhaskar  
Garugapati Vijaya Bhaskar